AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS

Claim 1 (currently amended): A scalable fish rearing raceway system comprising:

(a) one or more fish containment structures having two or more parallel linear fish channels with semi-circular end sections, and having a walled off centrally located inner portion for housing water propulsion means, water treatment means and dead and dying fish removal means, whereby said walled off centrally located inner portion is in fluid communication with said one or more fish containment structures;

(b) water intake means, water outflow means, water propulsion means, water circulation means, and water velocity control means, all in fluid communication with said fish containment structure;

(c) fish harvesting/grading means further comprising a fish harvesting/grading channel in fluid communication with said one or more fish containment structures, whereby fish within said one or more fish containment structures are readily sized, and subsequently separated out for either retention in said fish containment structure for further growth or transferral to said fish harvesting/grading channel for harvesting from said fish containment structure; and

(d) one or more passive dead and dying fish removal means, whereby floating dead or submerged dead or dying fish are continuously removed from said fish containment structure passively by employing water current only, whereby said fish removal means further comprises;

(a) a circular hydrocone structure in fluid communication with the water within said one or more fish containment structures, having a conical bottom with walls sloping down to an opening outlet to allow sinking debris and particulate matter to be removed from said circular structure;

(b) a submerged vertical screen panel adjustably extending out from said circular hydrocone structure forming an entrance to direct fish into said dead and dying fish removal apparatus; and

(c) a screened ramp which starts at the floor of the fish rearing tank or raceway and uniformly climbs to the water surface along a 90 degree arc of said circular hydrocone structure wall to a flat portion located at the top of said screened ramp;

whereby the water flow within said one or more fish containment structures is used to passively deposit dead and dying, both floating and submerged fish into the hydrocone structure, up the screened ramp and onto said flat portion at the water surface, where the dead and dying fish are held for easy mechanical removal from the fish rearing system.

(e) integrated fish sizing and separation means, whereby fish of different sizes are separated out for either retention in said fish containment structure for further growth, or transferral to said fish harvesting/grading channel for removal from said fish containment structure; and

(f) electronic and microprocessor controlled fish feed dispensing means and electronic or microprocessor controlled water quality conditions monitoring means, whereby all fish feeding is automated and whereby all water conditioning is automated.

Claim 2 (canceled): The scalable fish rearing raceway system according to claim 1, wherein said fish containment structure having two or more parallel linear fish channels with semi-circular ends, includes a centrally located inner portion for housing or supporting said water propulsion means and said dead and dying fish removal means.

Claim 3 (currently amended): The scalable fish rearing raceway system according to claim 1, wherein said fish harvesting/grading channel in fluid communication with said one or more fish containment structures includes fish passageways between said harvesting/grading channel and fish containment means, whereby said passageways accommodate insertable solid barriers which prevent all fish from traveling to said harvesting/grading channel, and insertable mesh or bar barriers which selectively allow fish of varying size to pass into said harvesting/grading channel.

Claim 4 (currently amended): The scalable fish rearing raceway system according to claim 1, wherein said one or more passive dead and dying fish removal means includes an integrated hydrocone structure located in said ~~central portion~~ walled off centrally located inner portion of said semi-circular end sections of said fish containment structure, said hydrocone structure having an arc-shaped fish removal ramp located on the outer edge of said hydrocone structure, whereby said ramp decreases in depth as the water flows into it in a circular direction and floating or submerged dead or dying fish are passively washed up and out of the water within said hydrocone structure.

Claim 5 (currently amended): The scalable fish rearing raceway system according to claim 4, wherein said integrated hydrocone structure includes a water outlet located centrally at

the bottom of its conical structure for the purpose of allowing sinking debris to be washed out of said hydrocone structure.

Claim 6 (canceled): The scalable fish rearing raceway system according to claim **1**, wherein said water propulsion means includes one or more water propulsion pumps configured in conventional U-tube water return structures.

Claim 7 (canceled): The scalable fish rearing raceway system according to claim **6**, wherein said U-tube water return structures includes oxygen injection means which facilitates oxygenation of the water within said fish containment structure.

Claim 8 (currently amended): The scalable fish rearing raceway system according to claim **1**, wherein said fish containment structure includes two or more fish containment structures each having three or more parallel linear fish ~~channels~~ production raceway zones with semi-circular end sections and a common inner dividing wall.

Claim 9 (original): The scalable fish rearing raceway system according to claim **8**, wherein said fish production raceway zones includes one or more particulate removal means, said particulate removal means further comprising a screened drain box located in the floor of said fish production raceway zone.

Claim 10 (currently amended): The scalable fish rearing raceway system according to claim **1**, ~~wherein said~~ further comprising electronic or microprocessor controlled water conditions monitoring means includes sensors for monitoring water clarity, water temperature, water dissolved oxygen content, water ammonia content, water pH, water carbon dioxide content, and water mineral content.

Claim 11 (currently amended): The scalable fish rearing raceway system according to claim **2**, wherein said walled off centrally located inner portion ~~central portion~~ of said fish containment structure includes a water treatment zone which houses and supports effluent wastewater treatment means.

Claim 12 (canceled): The scalable fish rearing raceway system according to claim **1**, wherein said water circulation means includes conventional water paddlewheels located at the surface of the water which both cause water flow and removal of CO_2 from water.

Claim 13 (currently amended): The scalable fish rearing raceway system according to claim **1**, ~~wherein said~~ further comprising water velocity control means includes a series of water jets located on the floor of said fish containment structure, having a baffle means adjustably mounted in the floor of the raceway in front of the said jets, whereby the angle of said baffle means is varied to regulate water velocity within said fish containment structure.

Claim 14 (original):   The scalable fish rearing raceway system according to claim 13, wherein said water velocity control means further includes adjustable floor spoilers which can be lowered and raised to more accurately control and optimize the water velocity within the fish rearing zones.

Claim 15 (canceled):   A fish rearing system having a passive dead and dying fish removal apparatus comprising:

(a)   circular hydrocone structure in fluid communication with the water within a fish rearing tank or raceway, having a conical bottom with walls sloping down to an opening outlet to allow sinking debris and particulate matter to be removed from said circular structure;

(b)   a submerged vertical screen panel adjustably extending out from said circular hydrocone structure forming an entrance to direct fish into said dead and dying fish removal apparatus;

(c)   a screened ramp which starts at the floor of the fish rearing tank or raceway and uniformly climbs to the water surface along a 90 degree arc of said circular hydrocone structure wall to a flat portion located at the top of said screened ramp;

whereby the water flow within the fish rearing tank or raceway is used to passively deliver dead and dying, both floating and submerged fish into the hydrocone structure, up the screened ramp and onto said flat portion at the water surface, where the dead and dying fish are held for easy mechanical removal from the fish rearing system.

Claim 16 (currently amended):   A method for making a scalable fish rearing raceway system comprising the steps of:

(a)   providing one or more fish containment structures having two or more parallel linear fish channels with semi-circular end sections, and having a walled off centrally located inner portion for housing water propulsion means, water treatment means and dead and dying fish removal means, whereby said walled off centrally located inner portion ins in fluid communication with said one or more fish containment structures;

(b)   providing water intake means, water outflow means, water propulsion means, water circulation means, and water velocity control means, all in fluid communication with said one or more fish containment structures;

(c)   providing fish harvesting/grading means further comprising a fish harvesting/grading channel in fluid communication with said one or more fish containment structures, whereby fish within said one or more fish containment structures are readily sized, and subsequently separated out for either retention in said fish containment structure for further growth or transferral to said fish harvesting/grading channel for harvesting from said fish containment structure; and;

(d)   providing one or more dead and dying fish removal means, whereby floating dead or submerged dead or dying fish are continuously removed from said one or more fish containment structures by passively employing water current [[;]] only, whereby said fish removal means further comprises;

(a) a circular hydrocone structure in fluid communication with the water within said one or more fish containment structures, having a conical bottom with walls sloping down to an opening outlet to allow sinking debris and particulate matter to be removed from said

circular structure;

(b)   a submerged vertical screen panel adjustably extending out from said circular hydrocone structure forming an entrance to direct fish into said dead and dying fish removal apparatus; and

(c)   a screened ramp which starts at the floor of the fish rearing tank or raceway and uniformly climbs to the water surface along a 90 degree arc of said circular hydrocone structure wall to a flat portion located at the top of said screened ramp;

whereby the water flow within the fish rearing tank or raceway is used to passively deposit dead and dying, both floating and submerged fish into the hydrocone structure, up the screened ramp and onto said flat portion at the water surface, where the dead and dying fish are held for easy mechanical removal from the fish rearing system.

(e)   providing integrated fish sizing and separation means, whereby fish of different sizes are separated out for either retention in said fish containment structure for further growth, or transferral to said fish harvesting/grading channel for removal from said fish containment structure; and

(f)   providing electronic and microprocessor controlled fish feed dispensing means and electronic or microprocessor controlled water quality conditions monitoring means, whereby all fish feeding is automated and whereby all water conditioning is automated.

Claim 17 (canceled):   The method for making a scalable fish rearing raceway system according to claim **16**, wherein said step of providing said fish containment structure having two or more parallel linear fish channels with semi-circular ends, further includes providing a central portion for housing or supporting said water propulsion means and said dead

or dying fish removal means.

Claim 18 (currently amended): The method for making a scalable fish rearing raceway system according to claim **16**, wherein said step of providing said fish harvesting/grading channel in fluid communication with said <u>one or more</u> fish containment structure<u>s</u> further includes providing fish passageways between said harvesting/grading channel and fish containment means, whereby said passageways accommodate insertable solid barriers which prevent all fish from traveling to said harvesting/grading channel, and insertable mesh or barriers which selectively allow fish of varying size to pass into said harvesting/grading channel.

Claim 19 (currently amended): The method for making a scalable fish rearing raceway system according to claim **16**, wherein said step of providing said floating dead or dying fish removal means further includes <u>the step of</u> providing an integrated hydrocone structure located in said central portion of said <u>one or more</u> fish containment structure<u>s</u>, said hydrocone structure having an arc-shaped fish removal ramp located on the outer edge of said hydrocone structure, whereby said ramp decreases in depth as the water flows into it in a circular direction and floating dead or dying fish are washed up and out of the water within said hydrocone structure.

Claim 20 (currently amended): The method for making a scalable fish rearing raceway system according to claim **19**, wherein said step of providing said <u>integrated</u> hydrocone structure further includes providing a water outlet centrally located at the bottom of its conical structure for the purpose of allowing sinking debris to be washed out of said hydrocone structure.

Claim 21 (canceled): The method for making a scalable fish rearing raceway system according to claim **16**, wherein said step of providing said water propulsion means further includes providing one or more water propulsion pumps configured in conventional U-tube water return structures.

Claim 22 (canceled): The method for making a scalable fish rearing raceway system according to claim **21**, wherein said step of providing said U-tube water return structures further includes providing oxygen injection means which facilitates oxygenation of the water within said fish containment structure.

Claim 23 (currently amended): The method for making a scalable fish rearing raceway system according to claim **16**, wherein said step of providing said one or more fish containment structures further includes the step of providing one or more fish containment structures each having three or more parallel linear fish ~~channels~~ production raceway zones with semi-circular end sections and a common inner dividing wall.

Claim 24 (original): The method for making a scalable fish rearing raceway system according to claim **16**, wherein said step of providing said fish production raceway zones further includes providing one or more particulate removal means, said particulate removal means further comprising a screened drain box located in the floor of said fish production raceway zone.

Claim 25 (currently amended): The method for making a scalable fish rearing raceway system according to claim **16**, ~~wherein said~~ further including the step of providing

electronic or microprocessor controlled water conditions monitoring means further includes

providing sensors for monitoring water clarity, water temperature, water dissolved oxygen

content, water ammonia content, water pH, water carbon dioxide content, and water mineral

content.

Claim 26 (currently amended): The method for making a scalable fish rearing

raceway system according to claim **16**, wherein said step of providing said <u>walled off centrally</u>

<u>located inner portion</u> central portion of said fish containment structure further includes <u>the step of</u>

providing a water treatment zone which houses and supports effluent wastewater treatment means

<u>within said walled off centrally located inner portion</u>.

Claim 27 (canceled): The method for making a scalable fish rearing raceway

system according to claim **16**, wherein said step of providing said water circulation means further

includes providing conventional water paddlewheels located at the surface of the water which

both cause water flow and removal of CO_2 from water.

Claim 28 (original): The method for making a scalable fish rearing raceway

system according to claim **16**, wherein said step of providing said water velocity control means

further includes providing a series of water jets located on the floor of said fish containment

structure, having a baffle means adjustably mounted in the floor of the raceway in front of the said

jets, whereby the angle of said baffle means is varied to regulate water velocity within said fish

containment structure.